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Atty. Docket No. JAC-990015

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No	:	09/664,118	Confirmation No.	9049
Applicant	:	Todd L. Lydic et al.		
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Examiner	:	Le, Mark T.		
Docket No.	:	JAC-990015		
Customer No.	:	36,787		

**REPLY BRIEF ON APPEAL**

Sir:

This is in support of the Notice of Appeal filed February 7, 2006, appealing the final rejection of claims 1-20 and in response to the examiners answer of October 2, 2006. A request for oral arguments accompanies this submission. The Commissioner is hereby authorized to charge deposit account 502800 for any and all fees necessary for filing this reply brief.

The arguments begin on page 2 of this response.

## ARGUMENTS

The applicants are submitting this reply brief to address the additional issues raised by the examiner in the examiner's answer. The essential issue is whether is proper that Claims 1-20 are rejected under 35 U.S.C. 103(a) as being obvious in view of the combined teachings of U.S. Patent No. 5,367,958 assigned to Johnstown America Corporation (hereinafter referred to as the "JAC Patent") taken in view of the teachings of Chapter 19 of The Making Shaping and Treating of Steel.

In addressing the applicants arguments of the reply brief the examiner states that "it should be noted that Chapter 25 documentation was not used as basis for the ... ground of rejection." This is one of the applicant's points in regarding the deficiencies of the examiner's position. The examiner must consider what a reference would teach one of ordinary skill in the art when considered as a whole. The secondary reference of The Making Shaping and Treating of Steel would clearly include Chapter 25. The examiner cannot pick apart a reference and rely only upon a selected portion thereof, ignoring express teachings of remaining portions to attempt to build a rejection. The reference must be considered AS A WHOLE for what it teaches and suggests to those of ordinary skill in the art.

The examiner seems to acknowledge that chapter 25 of the secondary reference expressly teaches the method of forming center sills for railcars. The examiner purposely chooses to mischaracterize this as well. The examiner states that this portion of the reference "may have suggested an alternative method forming the center sills for modern railcars." The examiner's use of "may" suggests that there is some ambiguity in this teaching, when there is none. The reference unambiguously teaches the conventional center sill formation method for center sills of modern railcars. It is NOT a possible suggestion as mischaracterized by the examiner, but rather an express teaching.

Further, to suggest that this chapter 25 is (only possibly) an "alternative method" for forming railcar center sills of modern rail cars is a further gross mis-characterization of the teaching. For it to be an "alternative" teaching, there must be some other "teaching" that this teaching is alternative to. There is no other method of forming a center sill for a rail car that is taught in the Making Shaping and Treating of Steel. Chapter 19 contains no such teaching for forming center sills in railcars. Contrary to the examiner mis-statements, Chapter 25 of the Making Shaping and Treating of Steel contains THE teaching for forming railcar center sills for modern railcars within this reference.

The examiner opines that Chapter 25 of the Making Shaping and Treating of Steel does not suggest that "such method is the only way that a railcar centersill can be formed." We agree that there are alternatives to the specifically disclosed species of center sill of Chapter 25 of the Making Shaping and Treating of Steel. As evidenced in the background of the invention, those of ordinary skill in the art have known "alternatives" to the two specific z-shaped hot rolled sections as taught in Chapter 25 of the Making Shaping and Treating of Steel. These included alternative hot rolled configurations that are welded together to form a composite, hot rolled center sill. However, there is nothing in the prior art of record to teach or suggest the cold forming of a center sill of a rail car. Chapter 25 of the Making Shaping and Treating of Steel establishes and reinforces what was described in the background of the prior art, namely, that center sills for railcars are formed from a plurality of hot rolled flat pieces or sections that are welded together (see page 1 of the specification). In this broader context (i.e. encompassing alternative hot rolled shapes for forming the center sill), Chapter 25 of the Making Shaping and Treating of Steel is believed to be the ONLY teaching for forming center sills found in the secondary reference.

The examiner's next statement is almost amusing. The examiner then states that Chapter 25 of the Making Shaping and Treating of Steel "does not even suggest that there may be disadvantages associated with cold forming a center sill." The Making Shaping and Treating of Steel is devoid of ANY

TEACHING OF COLD FORMING A CENTER SILL, and therefore will not contain a dissertation of the disadvantages of a method it does not teach.

The Making Shaping and Treating of Steel is similarly absent any discussion of the "advantages" of cold forming a center sill for a railcar. Chapter 25 of the Making Shaping and Treating of Steel is NOT suggesting an "alternative" process for forming center sills for a railcar that is preferred over a cold forming method of forming center sills discussed earlier in the reference. NO SUCH EARLIER TEACHING IS PRESENT IN THE REFERENCE. Chapter 25 of the Making Shaping and Treating of Steel is the ONLY teaching in the Making Shaping and Treating of Steel reference on the method of forming a center sill.

Cold forming of smaller mechanical struts and framing members is taught by Chapter 19 of the Making Shaping and Treating of Steel, and all the evidence of record suggests that such technique has been used, to date, on such small scale structural members. The applicants reiterate that the center sill is the primary load carrying structural member of a railcar. This is the backbone of the railcar upon which the entire railcar rests. For over 100 years, center sills have been formed by a composition of hot rolled components. The prior art of record reinforces that fact. There is NO TEACHING of a cold formed center sill anywhere in the applied prior art of record. There is similarly no teaching of cold forming ANY REASONABLY SIMILAR structural member that undergoes the forces and stresses similar to that of a center sill to suggest that one should try to cold form a center sill, or that it would be economical or practical to apply cold forming techniques to such a primary load bearing structure.

The examiner now relies upon U.S. Patent 2,243,808 to Ragsdale to show that cold forming structural members are known in railcars. The Ragsdale patent further evidences the applicant's position. The Ragsdale patent is specifically directed to a railcar upper structure, or body structure as shown in the figures. The weight savings described in such description is from the aluminum members that can be used to form the upper body elements.

Regardless, the upper body can be formed out of cold formed steel members as described, and which is consistent with Chapter 19 of the Making Shaping and Treating of Steel. There is nothing in the Ragsdale patent that teaches or suggests the cold forming of the center sill which is the primary structural element of the under frame. The Ragsdale patent is believed to be another reference to further evidence the novelty of the present invention. Despite the examiner's assertions of obviousness, the examiner can find no teaching in over 100 years of railcar literature to suggest the cold formed center sill for a railcar. The mountain of evidence supports the patentability of the present invention.

The examiner grasps at yet another prior art teaching to attempt to shore up the faltering rejection with U.S. Patent 2,621,059 to Ridgeway in which the longitudinal members of the under frame of land vehicles is formed from stainless steel strengthened by cold working. This reference is expressly directed to the formation of tractor trailers as repeatedly referenced therein. There is no analogous structural element that undergoes the stresses associated with the center sill of a railcar in this structure. As an aside it is noted that railcars, in particular well cars, are designed to carry multiple loaded trailers (called long hauling). The trailer under frame of this reference is expressly described as a structure which **"lends itself to manufacture of sheet metal"** (see column 1 lines 24-25). A center sill of a railcar is hardly the type of structure that lends itself to be manufactured from "sheet metal". The Ridgeway patent further evidences the state of the art that cold formed structural elements have been known for structural components that undergo significantly less forces and stresses than the center sill of a railcar. There is no teaching or suggestion of cold forming a center sill for a railcar or of cold forming a similar structural member that undergoes similar forces and stresses that would even suggest a cold formed center sill for a railcar. This is evidenced by the entire art of record and over 100 years of railcar center sill manufacture.

Regarding claim 2 the examiner is now asserting that the claim terms are actually broad enough to read upon two "portions" connected with no weld seams. A section is a term of art in the steel industry and well understood to define a formed member. Claim 2 requires two cold formed sections and not a left and right portion of an integral piece. The claimed terms are given their broadest "reasonable" definition in light of the specification. The examiners stretched interpretation loses the ordinary definition of section. The Making Shaping and Treating of Steel text of record should clearly establish what is meant by the term section to one of ordinary skill in the art. Claim 2 defines TWO cold formed sections, rather than "no more than two" cold formed sections, which is admittedly broader.

The examiner support for the assertion that cold working per se results in a thinner and lighter structural member is simply not clear. Where in the broad collection of prior art references is the examiner supporting this assertion that the same structural member formed from cold working will be thinner and lighter than a similar structural member formed from hot rolled components? Where is this taught as the "expected benefits of cold forming"?

### **Conclusions**

The applicants have developed a new railcar with a new structurally distinct center sill. The predecessor to the assignee was Johnstown America Corporation who was a spin off of Bethlehem Steel Corporation. The assignee and the inventors were well aware of conventional steel making technology for making center sills. There was no teaching or suggestion in the known prior art of cold forming a center sill for a railcar or a railcar having such a center sill. The state of the prior art is reflected in the background of the invention. These facts have been supported by ALL of the prior art of record. Indeed, in over 100 years of railcar center sill manufacturing technology there is no teaching or suggestion of cold forming such a primary structural member that undergoes stresses and forces similar to a center sill of a railcar. It is only in the applicant's disclosure where such a teaching has been found. The record is believed to clearly establish that there was a long felt need for over 100 years

for an improved railcar center sill and such need has only been filled with the advent of the applicant's invention here (which now dates back to 1996). The examiner's rejection ignores the teachings of the references themselves and over 100 years of prior art. Based on the above, Appellants respectfully request that the Board reverse the Examiner on the rejection of the claims.

Respectfully submitted,  
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